

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Claim 1 (currently amended): A fluid dynamic bearing system comprising:
a stationary sleeve;
a rotating shaft axially disposed through the sleeve;
a journal gap between the shaft and the sleeve, said gap defined by first and second interfacial surfaces of the shaft and sleeve;
at least one set of fluid dynamic grooves formed on the first interfacial surface of the journal gap;

at least one step defined on the second interfacial surface of the journal gap and opposite a portion of the at least one set of fluid dynamic grooves across the journal gap, wherein the at least one step comprises a feature that reduces the journal gap in a localized region of the at least one set of fluid dynamic grooves, and wherein the sleeve and shaft are operable to move axially relative to each other during operation such that the at least one step moves toward an apex of, and at least partially aligned with a portion of, the at least one set of fluid dynamic grooves.

Claim 2 (previously presented): The fluid dynamic bearing system according to claim 1, wherein the step opposes a portion of the at least one set of grooves across the journal gap during operation.

Claim 3 (previously presented): The fluid dynamic bearing system according to claim 2, wherein the fluid dynamic grooves are asymmetric to establish pumping pressure toward an end of the shaft.

Claim 4 (original): The fluid dynamic bearing system according to claim 2, wherein the at least one step comprises a circumferential raised surface on the second interfacial surface.

Claim 5 (original): The fluid dynamic bearing system according to claim 4, wherein the at least one step is opposite and offset axially from the at least one set of fluid dynamic grooves.

Claim 6 (withdrawn): The fluid dynamic bearing system according to claim 5, wherein the first interfacial surface of the gap comprises an outer diameter of the shaft, and the second interfacial surface comprises an inner diameter of the sleeve.

Claim 7 (withdrawn): The fluid dynamic bearing motor according to claim 1, wherein the outer diameter of the shaft further comprises two sets of fluid dynamic grooves and the inner diameter of the sleeve further comprises one step located across from one of the two sets of grooves.

Claim 8 (withdrawn): The fluid dynamic bearing motor according to claim 6, wherein the outer diameter of the shaft further comprises two sets of fluid dynamic grooves and the inner diameter of the sleeve further comprises two steps, each of the steps being defined, at least in part, across from one of the sets of grooves.

Claim 9 (original): The fluid dynamic bearing motor according to claim 2, wherein the first interfacial surface of the gap comprises an inner diameter of the sleeve and the second interfacial surface comprises an outer diameter of the shaft.

Claim 10 (withdrawn): The fluid dynamic bearing motor according to claim 9, wherein the inner diameter of the sleeve further comprises two sets of fluid dynamic grooves and the outer diameter of the shaft further comprises the at least one step.

Claim 11 (withdrawn): The fluid dynamic bearing motor according to claim 9, wherein the inner diameter of the sleeve further comprises two sets of fluid dynamic grooves and the outer surface of the shaft further comprises the at least one step.

Claim 12 (currently amended): A fluid dynamic bearing motor comprising:

a stationary sleeve;
a shaft and hub rotatable in relation to the sleeve;
a dynamic thrust bearing defined adjacent an end of the shaft;
a journal defined between the sleeve and the shaft;
a fluid bearing means between the sleeve and the shaft; and
a pressure regulating means cooperating with and opposing the bearing means across the journal therefrom to maintain proper axial alignment of the shaft and hub with the sleeve, wherein the shaft and stationary sleeve are operable to move relative to each other such that the pressure regulating means moves axially during operation toward an apex of the bearing means.

Claim 13 (original): The fluid dynamic bearing motor according to claim 12, wherein the fluid bearing means comprises: at least one set of fluid dynamic grooves formed on a first surface defining the journal; and a fluid in the journal.

Claim 14 (previously presented): The fluid dynamic bearing motor according to claim 13, wherein the pressure regulating means comprises at least one step formed on a second surface defining the journal and is disposed at least in part across the journal from the at least one set of fluid dynamic grooves.

Claim 15 (withdrawn): A fluid dynamic bearing as claimed in claim 13 wherein the fluid bearing means includes two sets of grooves on the first surface of the journal, and the pressure regulating means comprises step defined on a second surface of the journal at least partly across from each of the sets of grooves.

Claim 16 (withdrawn): A fluid dynamic bearing as claimed in claim 15 wherein at least one of the two sets of grooves is asymmetric to establish a pressure profile toward a base of the motor.

Claims 17-20 (cancelled)